

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

THE APPLICATION OF LOUISVILLE GAS AND)	
ELECTRIC COMPANY FOR APPROVAL OF A)	
STATISTICAL METER SAMPLING PLAN FOR)	CASE NO. 94-046
RESIDENTIAL GAS METERS PURSUANT TO 807)	
KAR 5:022, SECTION 8(5)(C) OF THE)	
COMMISSION'S REGULATIONS)	

O R D E R

On February 3, 1994, Louisville Gas and Electric Company ("LG&E") filed an application requesting approval of a statistical meter sampling plan for residential gas meters pursuant to 807 KAR 5:022, Section 8(5)(c). After numerous discussions with the Commission Staff, LG&E filed its revised "Sampling Test Plan" on May 5, 1995 proposing to include commercial and industrial gas meters and requesting the Commission approve it as a pilot proposal for a period of 5 years. The revised plan, described as an Appendix to this Order, is based upon Military Standard 105D, Sampling Procedures and Tables for Inspection by Attributes ("Military Standards"). In conjunction with this proposal, LG&E requests a deviation from 807 KAR 5:022, Section 8(3)(a)(1), to test samples of new or remanufactured meters under the terms of the revised plan in lieu of the 100 percent testing required under the regulation.

After consideration of the record and being otherwise sufficiently advised, the Commission finds that LG&E's revised plan should be accepted for a pilot period of 5 years and, further, that

LG&E's requested deviation from 807 KAR 5:022, Section 8(3)(a)(1), should be granted based upon the following:

LG&E represents that the purpose of the sampling plan is to detect and remove, at the earliest possible date, any group of meters which does not meet performance standards, and to collect sufficient data to demonstrate the most accurate, yet competitively priced, meters for LG&E to employ in its operations. To that end, LG&E will achieve savings by reducing unnecessary testing of the higher quality, better performing meters. Savings may also be realized by reducing costs associated with repair and replacement of lower quality gas meters. LG&E estimates a 20-year savings of \$6,590,000 from implementing the sample testing plan, as compared to the costs of current required periodic testing.

LG&E's proposal covers all classes of positive displacement diaphragm gas meters which will be divided into control groups. For the residential class of meters LG&E will test samples in years 2, 4, and 6 of the meters' lives, with annual testing beginning in the 8th year of service. No meter in this class will remain in service for more than 35 years. For the commercial class of meters, LG&E will test samples in the second year of service and will begin annual testing in the fourth year. No meter in this class will remain in service for a period greater than 10 years. For the industrial class, LG&E will begin annual testing of meters in the first year of service and no meter in this class will remain in service for a period greater than five years.

LG&E further proposes to test samples of new lots of like gas meters, in accordance with Military Standard normal inspection level II using an acceptable quality level of 1.0 percent to ensure an accuracy average of 99 percent. All new meters purchased will be tested by the manufacturer prior to shipment to LG&E and the manufacturer's test records would be filed by LG&E with an annual sampling test report.

LG&E proposes to file an annual report with the Commission which would include at a minimum identification and test results of each control group, test results for the new meters including the manufacturer's test records, evaluation and analysis of the data, and any corrective action taken. LG&E would also address cost savings, safety measures, and the overall efficacy of the sampling plan. The Commission has been advised that LG&E proposes calendar year 1995 to represent the first year of the proposed plan.

In response to concerns that safety inspections normally triggered by the testing requirements of the Commission's regulations will not be performed as scheduled or that the overall safety of customer service may decline as a result of this program, LG&E has stated that a customer's pipe will be inspected for defective operating conditions at the time a meter is removed under the new plan. LG&E has also confirmed that there will be no change in the inspection of curb valves as a result of the new plan. LG&E has also proposed to develop a manual to enhance the safety level in gas customers' homes.

IT IS THEREFORE ORDERED that:

1. LG&E's proposed meter sampling plan and its requested deviation from 807 KAR 5:022, Section 8(3)(a)(1), are approved for a period of 5 years from the date of this Order. At the expiration of the 5-year period, but no later than September 1, 2000, LG&E shall file its evaluation of the plan with the Commission along with any application to continue or notice of discontinuance of the plan.


2. LG&E shall file its first annual report no later than April 1, 1996 and subsequent reports within every 12 months thereafter.

Done at Frankfort, Kentucky, this 23rd day of August, 1995.

PUBLIC SERVICE COMMISSION


Chairman


Vice Chairman


Commissioner

ATTEST:


Executive Director

APPENDIX

APPENDIX TO AN ORDER OF THE KENTUCKY PUBLIC SERVICE COMMISSION IN CASE NO. 94-046 DATED AUGUST 23, 1995.

DESCRIPTION OF LOUISVILLE GAS AND ELECTRIC COMPANY'S

SAMPLE TESTING PLAN

Classes of Meters. Residential class meters are defined as meters which measure gas flow up to and including 500 cfh. Commercial class meters measure gas flow above 500 cfh to and including 1,500 cfh. Industrial class meters measure gas flow over 1,500 cfh.

Control groups. Gas meters will be divided into homogeneous control groups and in each group will be between one and ten thousand gas meters. A sample will be drawn randomly from each control group, with the sample size determined by the size of the control group and the table of sample size code letters for normal inspection level II of the Military Standards.

Regardless of the group size, the minimum sample size for residential meters will be 32 meters or the number of group, if smaller. Since the group size for commercial and industrial meters will usually be small, the minimum sample size will be determined by inspection level II of single sample plans for normal inspection in the master table of the Military Standards.

Testing in service meters. A control group of in service meters will be tested according to the table for a single sample plan, normal inspection level, with an acceptable quality level ("AQL") of 6.5 and accuracy level of ± 2 percent as described in Attachments A and B to this Order. Meters in the control group

will be selected randomly for testing by using random number generator software from the meter database to ensure that all meters in the control group will have an equal chance to become part of the sample.

Table 1 listed herein indicates the group size, sample size accept and reject levels in accordance with Military Standards and an AQL of 6.5 for normal inspection in the master table.

CONTROL GROUP	SAMPLE SIZE	ACCEPT	REJECT
2 TO 8	2	0	1
9 TO 15	3	0	1
16 TO 25	5	0	1
26 TO 50	8	1	2
51 TO 90	13	2	3
91 TO 150	20	3	4
151 TO 280	32	5	6
281 TO 500	50	7	8
501 TO 1200	80	10	11
1201 TO 3200	125	14	15
3201 TO 10000	200	21	22

TABLE 1 - SINGLE SAMPLING PLAN FOR NORMAL INSPECTION

Performance of a control group is acceptable when the number of meters in the sample test within an accuracy level of ± 2 percent for all test flow rates; do not exceed the accept number in Table 1. The control group is rejected if the number of meters rejected in the sample equals or exceeds the reject number in Table 1.

An accepted control group will remain in service until all meters within the group have been removed by attrition or service life limitations of the Plan. A rejected control group will be removed according to the Plan's early removal program.

When a control group is rejected, all meters within the group will be removed from service within 18 months. However, a sub-group within the control group may be identified for poor performance while the remaining group is tested and proven to be acceptable. In such case, the sub-group will be removed within 12 months, while the remaining meters in the original control group remain in service.

Reduced inspection for in service meters. In order to provide an incentive for high quality performance in a control group, the Plan includes reduced testing, or a reduced inspection level, which is implemented according to Table 2 of the Military Standards listed herein. Single sample plans for reduced inspection require that ten consecutive control groups are tested and no group is rejected during the normal level inspection; and the total number of meters rejected in each of the samples is no greater than the applicable number in Table 2.

CONTROL GROUP	SAMPLE SIZE	ACCEPT	REJECT
5 TO 25	2	0	1
26 TO 50	3	0	1
51 TO 90	5	1	2
91 TO 150	8	1	2
151 TO 280	13	2	3
281 TO 500	20	3	4
501 TO 1200	32	5	6
1201 TO 3200	50	7	8

TABLE 2 - SINGLE SAMPLING PLANS FOR REDUCED INSPECTION

When a control group or sub-group is subject to a reduced inspection, the normal inspection level is implemented if the

control group or sub-group is rejected. Table 2 provides the range of group and sample sizes, and the accept and reject limits when a reduced inspection is instituted. The number of meters in a control group subject to reduced inspection will not exceed 3,200 meters and the minimum sample size for residential meters will be 32 meters.

Testing new meters. The Plan includes sample testing of groups of new meters in accordance with Military Standards, normal inspection level II, and an AQL of 1.0 to insure an accuracy average of 99 percent. All new meters purchased by LG&E will be tested by the manufacturer before shipment to LG&E. A copy of the manufacturer's test records for new meters will be filed with the Commission in the annual sampling plan report. If the sample from any group fails the test, the entire group will be rejected.

Annual report and safety issues. LG&E proposes to file an annual report with the Commission which would include at a minimum identification and test results of each control group, test results for the new meters including the manufacturer's test records, evaluation and analysis of the data, and any corrective action taken. LG&E would also address cost savings, safety measures, and the overall efficiency of the sampling plan.

In response to concerns that safety inspections normally triggered by the testing requirements of the Commission's regulations will not be performed as scheduled, or that the overall safety of customer service may decline as a result of the proposed Plan, LG&E proposes to inspect a customer's house piping for

defective operating conditions at the time a meter is removed. LG&E has also confirmed that there will be no change in the inspection of curb valves as presently required by Commission Order in Case No. 9607.¹

LG&E also proposes to develop a natural gas owners manual to enhance the level of safety in its gas customers' homes. The manual will include safety issues, reference guides, meter reading, costs, operation and procedures for gas installation.

¹ Case No. 9607, Louisville Gas and Electric Company's Failure to Comply with Curb Box Accessibility Requirements, Order entered May 21, 1987 approving Stipulation and Proposed Settlement.